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Improving weekend handover between junior doctors on medical and surgical wards

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Abstract

Poor weekend handover has been implicated as one of the causes of observed higher mortality rates at weekends in UK hospitals. In a large teaching hospital we, a group of junior doctors, set about improving the quality and effectiveness of weekend handover. We used the Model for Improvement to implement a weekend handover sticker through an iterative process using multiple Plan/Do/Study/Act (PDSA) cycles. Over the 16 week study period the number of completed weekend tasks increased by 30% and the number of patients with a documented weekend handover increased by nearly 50%.

Junior doctors are well positioned to notice the quality and safety shortcomings within hospitals, and by using effective improvement methods they can improve these systems at little or no cost.

Problem

Mortality rates for inpatients in acute hospitals over weekends are higher than those during the week (1). Some of this effect is likely to be due to inadequate handover between a patient's normal weekly staff and the on-call team at the weekend. At the Royal Devon and Exeter NHS Foundation Trust (RDE) we, a group of junior doctors, noticed that the weekend handover of patients was sub-optimal. Many patients had no documented handover in their notes and where a handover was documented this was not standardised and was of variable quality. Each ward had patchy communication available between teams, consisting of either loose sheets of paper or a blank book; however few documented requests were being written for the weekend teams and other healthcare professionals were often unaware of plans for individual patients. Consequently many of the patient-related tasks requested by medical teams in the week were not being completed by the weekend team.

Background

Most hospitals have poor weekend handovers and the data from Dr Foster (1) suggests that this might contribute to increased mortality at weekends. Although it is widely acknowledged that the problem exists in many hospitals little published research on solutions exists. Two papers have demonstrated that electronic handover improves quality and may reduce safety incidents (2,3). A project in hospital near to the RDE successfully used handover stickers placed in the patient's notes; however this research has not been published. Three projects recently published in the BMJ Quality Improvement Reports Journal used proformas and checklists to improve weekend handover; however we felt that it was important to initially get a good handover in each patient's notes (4-6). We did not have the resources or facilities to implement an electronic system so we chose initially to copy the previously used handover stickers and implement them using the Model for Improvement (7).

The Royal Devon and Exeter Hospital is a large teaching hospital in the South West of England which carries out most medical and surgical procedures excepting neuro and cardiothoracic surgery.

Baseline Measurement

Data were collected throughout the project over a 16 week period on two trial wards; a medical and a surgical ward. Two metrics were collected by rapidly assessing all the patients' notes; the percentage number of tasks with completed documentation and the number of patients with an adequate plan documented in the notes. Five sets of data were collected before any interventions were started (see the attached chart, the red line shows the median). Between 30-100% of tasks were completed and between 10-40% of patients had an adequate weekend handover documented in the notes.

Design

Before starting any interventions this project was discussed with the team that had implemented weekend handover stickers at the neighbouring hospital. They had unpublished data showing the effectiveness of the stickers in patients' notes; therefore it was decided initially to use their solution. Small adaptations were made to their handover sticker before trials began to make it more relevant to the RDE. The sticker was then implemented using the iterative approach of The Model for Improvement.

Strategy

PDSA cycle 1: The handover sticker was trialled on just the surgical ward and only ten were made and used. The normal weekly team and weekend on-call doctor provided feedback. Modifications were made (e.g. boxes increased in size, tick box sections included) and then the sticker was then trialled again as PDSA cycle 2.

PDSA cycles 2-5: Over a five week period the sticker was modified repeatedly on the basis of immediate feedback of users. Gradually the sticker was spread from ten patients to all the patients on the two trial wards.

PDSA cycle 6: A teaching session for all foundation year one doctors was organised to raise awareness of the sticker.

PDSA cycle 7: The printed stickers were handed out to the F1s during their Friday teaching session to ensure the doctors had easy access to the weekend handover stickers.

Throughout the whole process data were continually gathered from the two trial wards.

Results

The attached chart shows the completed data set. After the five week implementation period the percentage of completed jobs had increased from a median of 70 to a median of 100%. The median percentage of patients with a completed weekend handover in the notes increased from 25 to 72.5% by the end of the project.

The attached charts show data for both metrics with the median drawn on the chart for the first five data points. Both metrics have more than 6 points continuously above the median after the initial data collection indicating special cause variation i.e. the weekend sticker had a significant effect on increasing both the number of patients with a weekend handover documented in the notes and the number of completed tasks.

Lessons and Limitations

This project was run by a group of foundation programme doctors, the most junior within the hospital. As well as improving handover effectiveness we learnt valuable skills during the process including; team working, organising meetings, negotiating, IT and statistical analysis of data over time. Most importantly we realised that quite simple changes can improve the systems and processes that we use, ultimately improving the quality of care of not just our patients but the wider patient population. This project had almost no financial cost attached to it; we worked willingly in our own time and the stickers were prepared on sheets already used by the hospital.

One of the most important lessons was about pre-intervention data. We collected five data points before we started the iterative improvement process. This was partly because of the enthusiasm of the team who were desperate to start making improvements and partly because of time constraints. For reliable statistical analysis of data over time it is advisable to establish 10 data points before any PDSA cycles to ensure that any improvement is real and not just common cause variation. This is a problem for projects where data cannot be collected any more frequently than weekly and those that have to be completed within a year. Thus the main lesson for others is to start collecting data as soon as possible.

As with many projects sustainability of interventions is key but can be difficult to achieve particularly when the doctors involved disperse at the end of the year. Lamentably the numbers of stickers in use has decreased but they are still being used one year after the end of the project.

Conclusion

A simple intervention such as weekend handover stickers for patients' notes can improve the performance of systems and ultimately outcomes for patients. The Model for Improvement allowed the most junior doctors to effect change with minimal support from senior managers and clinicians in the hospital. Junior doctors are in a unique position to see where the real safety and quality issues are and by using effective methodology can work to improve these problems. As the NHS faces increasing demands with diminished funding junior doctors must be encouraged to both do their jobs, and with structured support, work to improve their jobs.

References

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Declaration of interests

Nothing to declare

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